

CHAPTER 2
ENVIRONMENTAL QUALITY

TABLE OF CONTENTS

| | |
|--|------------|
| 1. GENERAL. | <u>2-2</u> |
| a. The National Environmental Policy Act (NEPA) | <u>2-2</u> |
| b. Executive Order 11514. | <u>2-2</u> |
| c. Clean Water Act of 1977 | <u>2-2</u> |
| d. Clean Air Act | <u>2-2</u> |
| e. Solid Waste Disposal Act | <u>2-2</u> |
| f. Toxic Substances Control Act | <u>2-2</u> |
| g. Safe Drinking Water Act | <u>2-3</u> |
| h. Executive Order 12088. | <u>2-3</u> |
| i. Executive Order 12114. | <u>2-3</u> |
| j. Executive Order 12316. | <u>2-3</u> |
| k. Protection of Historic and Cultural Properties. | <u>2-3</u> |
| l. Comprehensive Environmental Response, Compensation and Liability Act of 1980. | <u>2-3</u> |
| 2. GENERAL GUIDANCE. | <u>2-3</u> |
| a. Quality. | <u>2-3</u> |
| b. Environmental Factors. | <u>2-3</u> |
| c. Maintenance and Enhancement. | <u>2-4</u> |
| d. Recommendations on Projects. | <u>2-4</u> |
| e. Historic Preservation. | <u>2-4</u> |
| f. Community or Local Concerns. | <u>2-4</u> |
| 3. PLANNING AND DESIGN FOR ENVIRONMENTAL QUALITY. | <u>2-4</u> |
| a. Environmental Factors. | <u>2-4</u> |
| b. Environmental Effects of Alternative Approaches. | <u>2-5</u> |
| 4. PREPARATION OF ENVIRONMENTAL DOCUMENTS. | <u>2-5</u> |
| 5. POLLUTION ABATEMENT. | <u>2-5</u> |
| a. General Policy on Pollution Abatement. | <u>2-5</u> |
| b. Control of Water Pollution. | <u>2-5</u> |
| c. Control of Air Pollution. | <u>2-5</u> |
| d. Solid Waste Management and Disposal. | <u>2-6</u> |
| e. Hazardous Waste Management and Disposal. | <u>2-6</u> |
| 6. ENVIRONMENTAL PROTECTION DURING CONSTRUCTION OPERATIONS. | <u>2-6</u> |
| a. Review of Construction Projects. | <u>2-6</u> |
| b. Technical Specifications for Environmental Quality. | <u>2-6</u> |
| 7. REFERENCES. | <u>2-7</u> |

CHAPTER 2
ENVIRONMENTAL QUALITY

1. GENERAL. There is a constant awareness of the need to protect and enhance the quality of the environment. In keeping with this nationwide concern, the Congress and the Administration have enunciated several policies for the preservation and enhancement of the environment. In general, environmental legislation requires that federal agencies comply with procedural as well as substantive requirements of the designated regulatory agencies, including the payment of appropriate fees. The documents issuing these policies are discussed below, and key personnel at all levels should be made aware of their contents so as to assist in the decision making process.

a. The National Environmental Policy Act (NEPA) (reference 2-1). This Act declares a national policy to encourage productive and enjoyable harmony between people and their environment; to provide efforts that will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of people; and to enrich the understanding of the ecological systems and natural resources important to the nation. This Act requires, among other items, that there be included with every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the natural environment, a detailed five-point statement of the environmental impact of the intended action. The Council on Environmental Quality has issued implementing regulations for NEPA (reference 2-2) that provide specific information concerning the preparation and coordination of environmental documentation.

b. Executive Order 11514. This Executive Order (reference 2-3) directs federal agencies to implement NEPA (reference 2-1). Further, it requires that federal agencies provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Among other items, the Executive Order requires that federal agencies monitor, evaluate, and control, on a continuing basis, activities so as to protect and enhance the quality of the environment.

c. Clean Water Act of 1977, Public Law 95-217, as amended (reference 2-4). Among other items, this Act establishes the National Pollutant Discharge Elimination System (NPDES) and requires federal agencies to apply for a permit for each point source of wastewater discharge and comply with the conditions of each permit. Wastewater sent to a publicly-owned treatment plant must meet pretreatment standards prescribed by this Act and of the agency that owns the treatment plant. The Act also requires that construction of facilities for treatment of wastewater at federal facilities after 30 September 1979 not be initiated unless alternative methods for wastewater treatment using innovative treatment processes and techniques are used. This requirement is not applicable when the life-cycle cost of the alternative treatment works exceeds the life-cycle cost of the most cost-effective alternative by more than 15 percent. This Act also requires that for certain pollutants, point source discharges will be treated using the best available technology economically achievable.

d. Clean Air Act, Public Law 95-90 as amended (reference 2-5). Among other items, this Act requires federal agencies to apply for permits to operate and to construct facilities to control stationary air pollutant sources and to comply with the conditions of each permit.

e. Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, and Amendments (RCRA), Public Law 94-580 (reference 2-6). Among other items, this Act requires federal agencies to properly manage hazardous waste from its time of generation to its disposal. Agencies must obtain permits for their hazardous waste treatment, storage, and disposal facilities. Proper shipping papers (manifests), packaging, and labeling must be used when transporting hazardous waste. The 1984 amendments apply the requirements to persons who generate as little as 100 kilograms of hazardous waste in any month, and require registration and controls on underground tanks used for storing oil and hazardous waste.

f. Toxic Substances Control Act, Public Law 94-469, as amended (reference 2-7). Among other items, this Act requires federal agencies to properly manage the use and disposal of all toxic substances and specifically requires such management of Polychlorinated Biphenols (PCB) and items that contain PCB.

g. Safe Drinking Water Act, Public Law 95-190 as amended (reference 2-8). Among other items, this Act requires federal agencies who own or operate drinking water distribution systems to ensure that the water meets primary drinking water standards, and where required, that such systems are registered, licensed, or permitted. This Act also requires that special attention be paid to the protection of designated sole source aquifers during construction and operation of Department of Defense (DoD) facilities.

h. Executive Order 12088. This Executive Order (reference 2-9) outlines the policies that are to govern compliance with federal, state, and local environmental standards by federal facilities. The head of each executive agency is responsible to ensure that federal facilities are at all times designed, constructed, operated, and maintained in compliance with all federal, state, and local environmental requirements. The Executive Order further requires that a plan be sent annually to the Office of Management and Budget (OMB) to provide for improvements necessary to meet applicable standards. Exemptions from applicable control standards may only be granted by the President. Furthermore, the construction or operation of federal facilities outside the United States will comply with the environmental pollution control standards of general applicability in the host country or jurisdiction.

i. Executive Order 12114. This Executive Order (reference 2-10) requires that responsible officials of federal agencies take into consideration pertinent environmental considerations when making decisions on major federal actions outside the geographic borders of the United States and its territories and possessions.

j. Executive Order 12316. This Executive Order (reference 2-11) delegates to the Secretary of Defense the responsibility for investigation and removal of hazardous substance releases from DoD facilities and vessels.

k. Protection of Historic and Cultural Properties. Policies are issued by the following documents:

- (1) National Historic Preservation Act, Public Law 89-665 (reference 2-12).
- (2) Archaeological Resources Protection Act, Public Law 96-95 (reference 2-13).
- (3) AR 420-40, Historic Preservation (reference 2-14).
- (4) TM 5-801-1, Historic Preservation, Administrative Procedures (reference 2-15).
- (5) TM 5-801-2, Historic Preservation Maintenance Procedures (reference 2-16).
- (6) Secretary of the Interior's Standards and Guidelines (reference 2-17).

l. Comprehensive Environmental Response, Compensation and Liability Act of 1980. As amended, this Act (reference 2-18) subjects federal agencies courses of action to clean-up sites where the agencies may have been wholly or partially responsible for contaminating the soil or groundwater. Also, the Act requires reporting of hazardous substance releases and previous disposal actions.

2. GENERAL GUIDANCE. In consonance with the congressional and administration policies provided in paragraph 1., above, the following general guidance on environmental quality apply to construction:

a. Quality. Necessary measures will be taken to minimize all forms of environmental pollution and meet federal, state, and local environmental quality standards. Environmental pollution is that condition that results from the presence of chemical, physical, or biological agents in the air, water, or soil that so alter the natural environment that an adverse effect is created on human health or comfort, fish and wildlife, other aquatic resources, plant life, and structures and equipment to the extent of producing economic loss, impairing recreational opportunity, or marring natural beauty.

b. Environmental Factors. The environmental factors in following paragraph 3.a. will be carefully examined when developing projects and studying alternative means of meeting the requirements.

c. Maintenance and Enhancement. Maintenance and Enhancement of environmental quality will be given full consideration in decision making along with economic, social, and technical factors. Also, for demolition or renovation projects, or both, an asbestos survey of the facility will be included in the project planning.

d. Recommendations on Projects. Recommendations on projects will be based on a balanced evaluation of military requirements, and the economic and environmental factors involved.

e. Historic Preservation. Project sites meeting the criteria of the National Register as historical or archaeological places and other areas of special interest relating to natural wildlife and plant life will be preserved to the extent possible an in accordance with appropriate public laws.

f. Community or Local Concerns. When practicable, the environment of the community or locality where public works are situated should be enhanced to increase its value to the public. Design Agencies will maintain coordination with appropriate state and local communities in accordance with the requirements of Executive Order 12371 (reference 2-19) as implemented by DoD Directive 4165.61 (reference 2-20).

3. PLANNING AND DESIGN FOR ENVIRONMENTAL QUALITY.

a. Environmental Factors. In keeping with the above policies and general guidance, special attention will be given to environmental factors in the development, design, and construction of Army facilities. The following factors will be given increased attention in project development:

- (1) Affects on historic places and archeological sites.
- (2) Compatibility with the existing and planned adjacent communities (chapter 3).
- (3) Development of installation master plans will take into account environmental quality considerations (chapter 3).
- (4) Flood hazard considerations (chapter 3).
- (5) General architectural design provisions (chapter 6).
- (6) Grading, drainage, erosion, and dust control (chapter 3).
- (7) Landscaping and open space distribution, arrangements, and use(chapter 3).
- (8) Noise (chapter 3).
- (9) Provisions for physically handicapped individuals (chapter 7).
- (10) Siting of hazardous materials facilities (chapter 3).
- (11) Siting, orientation, and arrangement of buildings within an overall planning and design framework (chapter 3).
- (12) Siting of utilities (chapter 3).
- (13) Topography, natural beauty considerations, and hazards and nuisance effects (chapter 3).

(14) Land use restrictions in force due to past hazardous waste activities.

b. Environmental Effects of Alternative Approaches. Environmental effects of alternative approaches to providing required facilities will be analyzed and evaluated with a view toward enhancing the environment and minimizing any detrimental environmental effects.

4. PREPARATION OF ENVIRONMENTAL DOCUMENTS. In accordance with the requirements of NEPA, implementing regulations from HQUSACE, CEMP-E, the Council on Environmental Quality and DoD Directive 6050.1 (reference 2-21) and DoD Directive 6050.7 (reference 2-22), environmental effects must be considered when planning projects and proposals. The appropriate documentation will be developed as soon as sufficient project information is available. Environmental documents for military construction projects should be completed in accordance with AR 415-15 (reference 2-23) before submitting the annual military construction program to the Congress.

5. POLLUTION ABATEMENT.

a. General Policy on Pollution Abatement. Overall policy guidance for abatement of pollution at military installations is covered in DoD Directive 5100.50 (reference 2-24). According to the requirements of E.O. 12088, (reference 2-9), the design of military construction projects must include provisions for meeting the applicable standards for controlling pollution. Accordingly, the annual submission of the military construction program should include a statement indicating that the necessary provisions for the control of pollution have been included in the project designs.

b. Control of Water Pollution. Control of water pollution at Army installations will be in accordance with E.O. 12088 (reference 2-9), as implemented by DoD Directive 5100.50 (reference 2-24).

(1) Development of Water Pollution Control Projects. Preliminary engineering studies and designs required for the construction, alteration, and additions of water pollution control facilities will be started in sufficient time to ensure sound cost estimates for budgetary purposes and compliance with applicable water quality standards, and with installation spill prevention control and countermeasures plans, Title 40, U.S.C., CFR, Part 112 (reference 2-25). The Final Environmental Protection Agency (EPA) regulations for effluent guidelines, 40 CFR, Subchapter N, Effluent Guidelines and Standards (reference 2-26), that have a significant impact on industrial operations, established wastewater effluent regulations, and pretreatment standards. Where alternative methods are available for meeting water quality criteria, decisions will be based on the requirements of E.O. 12088 (reference 2-9) and E.O. 11514 (reference 2-3), and economic studies (chapter 1), TM 5-814-1 (reference 2-27), TM 5-814-2 (reference 2-28), TM 5-814-3 (reference 2-29), and TM 5-814-8 (reference 2-30).

(2) Participation in Area Wide Waste Treatment Management Plans. Public Law 95-217, Section 208 (reference 2-31), encourages the development and implementation of area wide waste treatment management plans. Consistent with this provision, Army installations should cooperate in developing these plans and to the extent feasible participate in regional waste treatment facilities.

c. Control of Air Pollution. Control of air pollution at Army installations will be in accordance with E.O. 12088 (reference 2-9), as implemented by DoD Directive 5100.50 (reference 2-24).

(1) Planning of Air Pollution Control Projects. It is essential that planning for all air pollution abatement facilities be started far enough in advance to obtain proper engineering review of all applicable standards and all alternative solutions to the problems. Adequate lead time is also necessary to develop suitable designs that will provide the realistic cost estimates necessary to ensure a reliable budget program, as well as to ensure that the necessary construction and operating permits are in place when required.

(2) Engineering Considerations of Air Pollution Control Projects. While air pollution control facilities must be provided to meet current emission standards within the time limit established in E.O. 12088 (reference 2-9), it

is essential that full engineering consideration be given to possible future requirements. More stringent emission standards are anticipated as states move to meet the primary and then the secondary ambient air quality standards and hazardous air pollutant standards under the Clean Air Act (reference 2-5). To the extent possible for current projects, engineering decisions will be made to accommodate future additions or modifications at minimum cost. It is mandatory that the design engineer be fully knowledgeable of pollution control requirements being considered for future adoption, especially at the state and local levels. The following are applicable:

(a) Alternatives. Where alternatives are available for meeting air quality standards, decisions will be based on the requirements of E.O. 11514 (reference 2-3) and E.O. 12088 (reference 2-9), and appropriate engineering cost studies.

(b) Fuel Selection. See chapter 14 for guidance on fuel selection.

d. Solid Waste Management and Disposal. Solid waste management and disposal at Army installations will be in accordance with E.O. 12088 (reference 2-9) and OMB Circular No. A-106 (reference 2-32), as implemented by DoD Directive 5100.50 (reference 2-24), DoD Instruction 4120.14 (reference 2-33), and DoD Directive 4165.60 (reference 2-34), and the applicable Defense Environmental Quality Program Policy Memoranda (DEQPPM) (reference 2-35), and TM 5-814-5 (reference 2-36).

e. Hazardous Waste Management and Disposal.

(1) Hazardous waste management and construction of waste disposal facilities at Army installations will be conducted in accordance with regulations promulgated pursuant to the Resource Conservation and Recovery Act (RCRA) (reference 2-6) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (reference 2-37), and applicable DEQPPM (reference 2-35). This applies to hazardous waste conforming storage projects permitted under the Resource Conservation and Recovery Act (RCRA) (reference 2-6) and TM 5-814-7 (reference 2-38).

(2) Hazardous waste storage facilities will be designed and constructed to meet the criteria published in 40 CFR 264 (reference 2-39) as a minimum. Where state or local regulatory agency criteria are more stringent they will prevail. Facilities will provide safe, adequate, and secure storage designed and constructed, as stated above, in minimum, austere facilities of low cost and in accordance with ETL 1110-3-360 (reference 2-40).

6. ENVIRONMENTAL PROTECTION DURING CONSTRUCTION OPERATIONS. In accordance with P.L. 91-190 (reference 2-41), and E.O. 11514 (reference 2-3) and E.O. 12088 (reference 2-9), when developing the design for a project, necessary measures will be taken to eliminate or minimize degradation of the environment during construction operations.

a. Review of Construction Projects. Construction projects will be reviewed to determine whether there are any potential sources of pollution or other damage to the environment that may occur during the construction of Army facilities. The scope of environmental considerations during construction activities concerns potential pollution of the air, land and water, and involves hazardous waste, noise, radiant energy, solid waste, and other pollutants. It also includes the affects on archeological sites, historic places, and the preservation and enhancement of general aesthetic values during and after construction.

b. Technical Specifications for Environmental Quality. An Environmental Assessment (EA) will be prepared for all construction projects in accordance with AR 200-2 (reference 2-42). Upon a determination that there is a potential source of degradation to the environment during construction operations, mitigation measures identified in the EA will be included in the technical specifications of the project to eliminate or minimize the damage. When developing these specifications, particular attention will be given to:

(1) Compliance. Ensuring that federal, state, and local laws pertaining to environmental pollution and historic and archeological preservation are complied with during construction operations.

(2) Construction Operations. Providing coverage in the specifications to minimize potential pollution and adverse effects from construction operations, including:

- (a) Air pollution caused by open burning; use of volatile materials, such as asphalts and paints; and dust caused by clearing, excavation, and grubbing.
- (b) Destruction of land forms, vegetation, archeological resources, and historic buildings or structures.
- (c) Noise pollution.
- (d) Erosion and sedimentation control.
- (e) Water pollution caused by spillage of bitumen, fuels, grease, and oils; erosion; cement and concrete spillage; aggregate washing; and sanitary and other waste disposal.

7. REFERENCES.

- 2-1 42 U.S.C. 4321-4361, The National Environmental Policy Act of 1969
- 2-2 Title 40, Code of Federal Regulations (CFR) 1501-1506, Council on Environmental Quality Regulations on Implementing National Environmental Policy Act Procedures
- 2-3 Executive Order 11514, Protection and Enhancement of Environmental Quality, March 5, 1970 (as amended by Executive Order 11991, May 24, 1977)
- 2-4 Public Law 95-217, Clean Water Act of 1977, as amended
- 2-5 Public Law 95-90, Clean Air Act, as amended
- 2-6 Public Law 94-580, Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act
- 2-7 Public Law 94-469, Toxic Substances Control Act, as amended
- 2-8 Public Law 95-190, Safe Drinking Water Act, as amended
- 2-9 Executive Order 12088, Federal Compliance with Pollution Control Standards, October 13, 1978
- 2-10 Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, January 4, 1979
- 2-11 Executive Order 12316, Responses to Environmental Damage, August 14, 1981
- 2-12 Public Law 89-665, National Historic Preservation Act of 1966, October 15, 1966, as amended by Public Law 95-515, December 12, 1980
- 2-13 Public Law 96-95, 93 STAT-721, Archaeological Resources Protection Act of 1979
- 2-14 AR 420-40, Historic Preservation, 15 May 1984
- 2-15 TM 5-801-1, Historic Preservation, Administrative Procedures, November 1975
- 2-16 TM 5-801-2, Historic Preservation Maintenance Procedures, February 1977

- 2-17 Secretary of the Interior's Standards and Guidelines
- 2-18 42 U.S.C. 9601, Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended
- 2-19 Executive Order 12371, Intergovernmental Review of Federal Programs, July 16, 1982
- 2-20 DoD Directive 4165.61, Intergovernmental Coordination of DoD Federal Development Programs and Activities, August 9, 1983
- 2-21 DoD Directive 6050.1, Environmental Effects in the United States of DoD Actions, July 30, 1979
- 2-22 DoD Directive 6050.7, Environmental Effects Abroad of Major Department of Defense Actions, March 31, 1979
- 2-23 AR 415-15, Military Construction, Army (MCA) Program Development, 1 December 1983 or latest edition
- 2-24 DoD Directive 5100.50, Protection and Enhancement of Environmental Quality, May 24, 1973
- 2-25 Title 40, U.S.C., Code of Federal Regulations, CFR, Part 112, Oil Pollution Prevention
- 2-26 40 CFR Subchapter N, Effluent Guidelines and Standards
- 2-27 TM 5-814-1, Sanitary and Industrial Wastewater Collection - Gravity Sewers and Appurtenance, March 1985
- 2-28 TM 5-814-2, Sanitary and Industrial Wastewater Collection - Pumping Stations and Force Mains, March 1985
- 2-29 TM 5-814-3, Domestic Wastewater Treatment, November 1978
- 2-30 TM 5-814-8, Evaluation Criteria Guide for Water Pollution Prevention, Control and Abatement Programs, July 1976
- 2-31 Public Law 95-217, Section 208, Federal Water Pollution Control Act Amendments of 1977
- 2-32 OMB Circular No. A-106, Reporting Requirements in Connection with The Prevention, Control, and Abatement of Environmental Pollution at Existing Federal Facilities, December 31, 1974
- 2-33 DoD Instruction 4120.14, Environmental Pollution Prevention, Control, and Abatement, August 30, 1977
- 2-34 DoD Directive 4165.60, Solid Waste Management - Collection, Disposal, Resource Recovery, and Recycling Program, October 4, 1976
- 2-35 Defense Environmental Quality Program Policy Memoranda (DEQPPM)
- 2-36 TM 5-814-5, Sanitary Landfill, August 1983
- 2-37 Public Law 96-510, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- 2-38 TM 5-814-7, Hazardous Waste Land Disposal/Land Treatment Facilities, November 1984
- 2-39 40 CFR 264, Hazardous Waste Management System; Standards for Hazardous Waste Storage and

Treatment Tank Systems

- 2-40 ETL 1110-3-360, Hazardous Waste Storage Facilities, 15 May 1985
- 2-41 Public Law 91-190, National Environmental Policy Act of 1969
- 2-42 AR 200-2, Environmental Effects of Army Actions, 1 September 1981